

WHAT IS CLAIMED IS:

1. A measuring device, comprising:
 - a reference component capable of being secured to a body part of a patient and providing a reference point;
 - an articulated measurement arm movably coupled to the reference component, the articulated measurement arm having a plurality of sections, each section having a measurement point; and
 - a plurality of sensors associated with the measurement points, the sensors capable of providing a plurality of data sufficient to allow determination of a position of each measurement point relative to the reference point.
2. The measuring device of claim 1, wherein the articulated measurement arm is movably coupled to the reference component with a hinge.
3. The measuring device of claim 1, wherein at least one of the sensors is an angular potentiometer.
4. The measuring device of claim 1, wherein the measurement points are capable of being in contact with the body part simultaneously.
5. The measuring device of claim 1, wherein the plurality of data is provided and captured by a computer substantially simultaneously.
6. A measuring device, comprising:
 - a femoral component capable of being secured to a leg of a patient and providing a reference point;
 - a tibial component movably coupled to the femoral component, the tibial component capable of being secured to the leg, the tibial component having a first sensor capable of providing data sufficient to determine a position and an orientation of the tibial component with respect to the femoral component;
 - a first measurement arm movably coupled to the femoral component, the measurement arm having a first measurement point capable of being brought into contact with the leg, the first measurement arm having a second sensor capable of providing a plurality of data sufficient to determine a position of the first measurement point with respect to the femoral component; and

a second measurement arm movably coupled to the tibial component, the second measurement arm having a second measurement point capable of being brought into contact with the leg, the second measurement arm having a third sensor capable of providing a plurality of data sufficient to determine a position of the second measurement point with respect to the tibial component;

wherein the first measurement point and the second measurement point are capable of being in contact with the leg simultaneously.

7. The measuring device of claim 6, wherein the first measurement arm is articulated and includes a first inner section movably coupled to the femoral component and a first outer section movably coupled to the first inner section, wherein the first measurement point is coupled to the first inner section, the measuring device further comprising:

a third measurement point coupled to the first outer section; and

a fourth sensor capable of providing a plurality of data sufficient to determine a position of the third measurement point with respect to the first measurement point;

wherein the first measurement point and the third measurement point are capable of being in contact with the leg simultaneously.

8. The measuring device of claim 6, wherein the second measurement arm is articulated and includes a second inner section movably coupled to the tibial component and a second outer section movably coupled to the second inner section, wherein the second measurement point is coupled to the second inner section, the measuring device further comprising:

a fourth measurement point coupled to the second outer section; and

a fifth sensor capable of providing a plurality of data sufficient to determine a position of the fourth measurement point with respect to the second measurement point;

wherein the second measurement point and the fourth measurement point are capable of being in contact with the leg simultaneously.

9. The measuring device of claim 6, wherein the first sensor is a plurality of sensors.

10. The measuring device of claim 6, wherein the first sensor is at least one angular potentiometer.

11. The measuring device of claim 6, wherein the tibial component is coupled to the femoral component with a hinge.

12. The measuring device of claim 6, wherein the first measurement arm is coupled to the femoral component with a hinge.

13. The measuring device of claim 6, wherein the second measurement arm is coupled to the tibial component with a hinge.

14. The measuring device of claim 6, further comprising:

a femoral-tibial component, wherein the femoral component and the tibial component are movably coupled to femoral-tibial component, the femoral tibial component having a sixth sensor capable of providing a plurality of data sufficient to determine a position and an orientation of the femoral-tibial component with respect to the femoral component.

15. The measuring device of claim 6, further comprising:

a third measurement arm movably coupled to the femoral-tibial component, the third measurement arm having a fifth measurement point capable of being brought into contact with the leg, the third measurement arm having a seventh sensor capable of providing a plurality of data sufficient to determine a position of the fifth measurement point with respect to the femoral-tibial component;

wherein the first measurement point, second measurement point and fifth measurement point are capable of being in contact with the leg simultaneously.

16. A method for generating a three-dimensional model of a body part, comprising: establishing a reference point associated with a physical landmark of the body part;

bringing a plurality of measurement points into contact with the body part, wherein each of the measurement points is in contact with the body part simultaneously, wherein each of the measurement points is mechanically coupled to the reference point;

using a computer to collect data from a plurality of sensors associated with the measurement points, wherein the plurality of sensors are capable of providing a plurality of data sufficient to determine the positions of each measurement point with respect to the reference point; and

determining the position of each measurement point in three-dimensional space with respect to the reference point to generate the three-dimensional model of the body part.